

## PATENT COOPERATION TREATY

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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT



(PCT Article 36 and Rule 100)

PCT/PTO 27 SEP 2004

10/509109

Applicant's or agent's file reference CTV/P100159WO	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA416)	
International application No. PCT/GB 03/01219	International filing date (day/month/year) 21.03.2003	Priority date (day/month/year) 28.03.2002
International Patent Classification (IPC) or both national classification and IPC B26B9/00		
Applicant HARDIDE LIMITED ET AL.		

1.	This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2.	This REPORT consists of a total of 5 sheets, including this cover sheet.  <input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  These annexes consist of a total of sheets.
3.	This report contains indications relating to the following items:  I <input checked="" type="checkbox"/> Basis of the opinion II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand  17.10.2003	Date of completion of this report  23.04.2004
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  Maier, M  Telephone No. +49 89 2399-2477  

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB 03/01219

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-19 as originally filed

**Claims, Numbers**

1-36 as originally filed

**Drawings, Sheets**

1/1 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY  
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International application No. **PCT/GB 03/01219**

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	7-11,13,14,16-18,25-29,31,32,34-36
	No: Claims	1-6,12,15, 19-24,30, 33
Inventive step (IS)	Yes: Claims	7-11,13,25-29,31
	No: Claims	14,16-18, 32,34-36
Industrial applicability (IA)	Yes: Claims	1-36
	No: Claims	

2. Citations and explanations

**see separate sheet**

**Re Item V**

- 1 Reference is made to the following documents:

D1: WO 97 39862 A  
D2: EP-A-0 707 921  
D3: EP-A-0 042 586  
D4: US-A-2 714 563  
D5: EP-A-1 158 070  
D6: US-A-4 945 640

- 2 The document D1, which is considered to represent the most relevant state of the art, discloses (pages 2-6, page 7, line 16 - page 8, line 3, Fig. 13, the references in parentheses referring to this document) a self-sharpening cutting tool having a cutting edge made of a first material (2) or materials, the cutting edge being coated only on one side (1) thereof with a coating substantially harder than the first material or materials, characterised in that the coating has a layered or laminar microstructure aligned substantially parallel to the coated side of the cutting edge.

In lines 12 and 13 of page 4 the thickness of the coating layer is specified as being preferably in the range of 0.01-20  $\mu\text{m}$ , most preferably 0.5-1.5  $\mu\text{m}$ . Page 5, lines 18 to 26 specify materials which may form a coating consisting of a combination of layers. In view of the thickness of layers specified before this will lead to a coating having a layered microstructure aligned substantially parallel to the coated side of the cutting edge.

The subject-matter of claim 1 does therefore not meet the requirement of novelty (Article 33(2) PCT).

- 3 The method of claim 19 is known from page 5, lines 1 to 26 of D1, such that the subject-matter of claim 19 does not meet the requirement of novelty (Article 33(2) PCT).
- 4 The additional features of dependent claims 4,6,12, 22, 24 and 30 are known from D1 and therefore the subject-matter of these claims does not meet the

requirement of novelty (Article 33(2) PCT).

- 5 Furthermore, the subject-matter of claims 1 and 19 is known from the document D2, see column 3, line 17 - column 4, line 35, claims 1 and 21, Fig. 1-11 (Article 33(2) PCT).
- 6 The document D3 discloses a self-sharpening cutting tool and a process of making such a tool having all the feature of claims 1 and 19 (Article 33(2) PCT), respectively, see page 20-page 23, Fig. 3-7. On page 22, line 25, D3 refers to the document D4 for the detonation coating process to achieve the coated cutting edge, so the teaching of D4 is considered to be comprised in the disclosure of D3. Column 6, lines 51 to 75 and Fig. 5 of D4 disclose a coating having a layered structure.
- 7 The features of dependent claims 2-5, 15, 20-23 and 33 are known from the cited passages of D3 (Article 33(2) PCT).
- 8 The features of dependent claims 14, 16-18, 32 and 34-36 apparently relate to simple design procedures which are either known from the state of the art cited in the international search report, particularly D5 and D6, or are obvious alternatives for a person skilled in the art. Therefore they do not involve an inventive step (Article 33(3) PCT).
- 9 The invention as specified in the claims is industrially applicable in the production of cutting tools.